October 31, 2013

Ms. Marlene H. Dortch
Secretary
Federal Communication Commission
445 12th Street SW
Washington, DC 20554

Re: Notice of *Ex Parte* Communication, WC Docket No. 13-184

Dear Ms. Dortch:

On October 24, 2013, Robert Bocher, E-Rate Support Manager for the Wisconsin Department of Public Instruction, Shawn Duren, Technology Director for the River Valley School District, Steve Schloman, Chief Information Officer for the Waukesha School District, and Ross Wilson, Educational Technology Director for Wisconsin Cooperative Educational Service Agency 10 (CESA 10) (collectively, the WI Technology Directors) spoke via telephone with Dania Ayoubi, Soumitra Das, Charles Eberle, and Mark Walker of the Wireline Competition Bureau and Michael Steffen of the Office of Strategic Planning and Policy Analysis. The purpose of the call was to discuss the WI Technology Directors' experiences with the E-rate program and solicit their input on the Commission's July 23, 2013 Notice of Proposed Rulemaking in the above-referenced docket. The WI Technology Directors provided the following information during the call:

- *WiscNet and BadgerNet*. Wisconsin has a two-tiered statewide research and education network. BadgerNet is the underlying transmission network that provides broadband circuits to public sector facilities across the state, including schools. School districts typically connect to BadgerNet circuits at district head ends (often the high school) and are then responsible for their own WAN circuits to connect the other schools in the district. WiscNet is a nonprofit, member-based Internet provider for research and educational institutions founded by the University of Wisconsin – Madison. Approximately 73% of school districts and 98% of libraries purchase Internet access service from WiscNet. Schools pay WiscNet for Internet access service at fixed rates based on the number of students, as opposed to bandwidth usage or speeds. WiscNet offers very low rates to schools and libraries by utilizing extensive peering arrangements, participating in several regional and national networks, and maintaining two 10 Gbps backbone circuits to POPs in Chicago and Kansas City. WiscNet also provides caching services for all network users. Mr. Bocher noted that 90% of Wisconsin school districts have fiber connections to at least one location and 70-80% of districts have fiber connections to each building.

- *WAN and Internet access speeds.*

- Waukesha has approximately 13,000 students at 26 sites. Waukesha's schools are part of a community area fiber network (CAN) along with the city of Waukesha, a local technical school, and a local university. The CAN owns its wide area network (WAN), which recently upgraded to 10 Gbps for all sites. The school district pays $25,000/yr to support CAN maintenance for all of its 26 sites. Waukesha schools purchase 1 Gbps of Internet Access service from WiscNet, which can be upgraded to 10 Gpbs in the near future, for $22,000/yr and pays an additional $7,000/yr to the CAN for membership in the WAN ring and connectivity to an Internet point of presence (POP). The district tracks bandwidth usage, which typically ranges from 400-500 Mbps and peaks at approximately 800 Mbps.
- CESA 10 is one of 12 regional cooperatives in the state that provide special education, instructional, and technology resources to member school districts. CESA 10 includes 29 school districts in western Wisconsin with approximately 35,000 students. CESA 10 also manages the Chippewa Valley Internetworking Consortium (CINC), a recently-upgraded CAN that provides a 10 Gbps WAN to government, educational, non-profit, and healthcare entities. CINC includes 18 school districts and approximately 30,000 students. All member schools pay only for annual maintenance costs on the WAN and pay WiscNet directly for Internet access service, based on their student population.
- The River Valley School District, located approximately 40 miles west of Madison, consists of 7 schools and 1,350 students. The high school, middle school, and elementary school on the district's main campus are connected to a 10 Mbps fiber WAN that costs $14,000/yr. The three outlying elementary schools are connected via cable modems at 100 Mbps download/5 Mbps upload at a cost of $7,200/yr. The district pays WiscNet $8,500/yr for a 100 Mbps Internet access connection.

- *WiFi capabilities.*
  - All three schools on River Valley's main campus have WiFi coverage through single radio HP wireless access points (WAPs) that cost approximately $400 each. The main campus deployment focused on coverage, not saturation, and does not yet have one WAP per classroom. The district is in the process of deploying WiFi to the three outlying elementary schools, under a plan that calls for newer dual radio HP WAPs in every classroom. Mr. Duren monitors the number of connected devices and bandwidth demand, and the WiFi network is currently sufficient for the schools' needs. River Valley purchases and manages its own WAPs, as opposed to receiving WAPs and management as part of a service. Mr.

Duren handles network management but also works with an outside consultant when necessary.

- CESA 10's goal is to support a 2-to-1 device to student ration, deploying 300 Mbps Cisco WAPs that cost approximately $600. Their philosophy is to focus on infrastructure and permit students to bring in devices rather than spend funds on purchasing and replenishing devices. CESA 10's member districts purchase WAPs directly but share the costs of network management.
- Waukesha has also focused on coverage rather than density and has regularly reinforced its WiFi infrastructure in recent years. The district's WiFi infrastructure currently supports 1-to-1 device deployment in its high schools and the entire district plans to distribute iPads to all students over the next three years. Mr. Schloman noted that the total WiFi traffic in Waukesha schools will exceed wired traffic within the next year.

- *Migration to the cloud*. Waukesha is moving all data, business management, and student services to the cloud. The district has reduced its total number of servers from 80 to 10 in the last year, and the three high schools no longer have on-site data centers. Mr. Wilson estimates that CESA 10 saves 50% on data storage costs by purchasing cloud services instead of servers. CESA 10 is working with vendors to expand its cloud-based curriculum. Mr. Wilson emphasized the importance of 24/7 learning and the need for students to have access to broadband away from campus.

- *Off campus broadband access.* CINC has developed a regional WiMax network that is currently used by emergency first responders and CINC is now deploying home WiFi devices with WiMax antennas so that students can access the WiMax network from home. Mr. Schloman stated that Waukesha schools are very concerned about the lack of low cost home Internet access options for student.

- *Misc*
  - Mr. Bocher stated that Wisconsin strongly supports allowing districts to own their own fiber networks when district-owned WANs deliver the lowest prices. He also stated that the broadband goals laid out in the NPRM have strong support in Wisconsin and that schools believe that recent sharp increases in bandwidth demand will continue.
  - The WI Technology Directors support streamlining the E-rate program wherever possible and expressed concerns that pending reforms might create additional paperwork and regulatory burdens for school districts.
  - The WI Technology Directors emphasized the importance of Priority 2 services. Generally speaking, no school district in Wisconsin other than Milwaukee receives Priority 2 support.

Respectfully submitted,

_____/s/_____

Charles Eberle

Attorney-Adviser, Telecommunications Access Policy Division, Wireline Competition Bureau